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ABSTRACT

Learning experience are all around us; they are not necessarily confined to the classroom. Well designed playscapes give children the opportunity to learn through discovery, and if the design of the play space is such that a teacher can give almost constant but unobtrusive guidance to the children's activities, out-of-door play space can become an educational laboratory in the broadest sense of the term. Well-designed playscapes provide opportunities for play to be meshed with learning and for teachers to learn about and from their children. Teachers often think of out-of-door play and time spent on the playground as a "recess from learning." Teachers of both preschool and schoolaged children should find suggestions in this bulletin that challenge them to see how they can transform their "recess" playgrounds into play spaces rich in fun and experimental learning. (Some of the drawings may photograph poorly.) (Author)

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play scape

two case studies

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Patricia Maloney Markun
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EA 006 078

foreword

Learning experiences, as this bulletin points out, are all around us. They are not confined to the classroom. Well-designed playscapes give children the opportunity to learn through discovery, and if the design of the play space is such that a teacher can give almost constant but unobtrusive guidance to the children's activities, out-of-door play space can become an educational laboratory in the broadest sense of the term.

Well-designed playscapes provide opportunities for play to be "meshed with learning" and for teachers to learn *about* and *from* their children. All too often teachers, especially teachers in the middle and upper grades, think of out-of-door play and time spent on the playground as a "recess from learning."

Teachers of both pre-school and school-age children will find in this bulletin suggestions that will challenge them to see how they can transform their "recess" playgrounds into play spaces rich in fun and experiential learning.

Beverly Karlen Gunst
Vice-President Representing
Early Childhood

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National Children's Center
Washington, D.C.

the Playscape — a place to learn

Richard J. Passantino, A.I.A.

Recently I read an essay by a ten-year-old girl about how school could be improved. Among other suggestions, it stated, "Also kids need to get closer to the real and natural things before they disappear, like taking bike hikes, staging hiking marathons, and even having outdoor classrooms!"

We adults whose childhood still contained many close-to-nature happenings may not be able to share this girl's sense of urgency. But we should remember that many of our early home activities were lessons in themselves in living on a farm where eggs were counted daily, where hogs had to be weighed, where the cycle of fruit and vegetable growing and harvesting were events full of learning and growth.

When planning for today's city child, we should strive to approximate these experiences, for the quality of learning that happened in such a setting was the important but almost imperceptible learning through play. Schools, and the spaces they have traditionally enclosed, have for too long been places where "serious learning" or "real learning" took place indoors, while "play" or "recess from learning" went on outdoors, as though play and learning were diametrically opposed concepts, the one involving pleasure, the other pain. Many a good teacher worked hard on his own to overcome these barriers, but structurally, our open places for children reflected this thinking: unkept open space; a few pieces of equipment for large-muscle development; and for the very young, a sandbox—if the dogs and cats could be kept away.

Nursery Schools Show the Way

Just as nursery schools have been among the groundbreakers in opening the educational patterns of the classroom, they have also been the first to discover the value of the outdoors for children's learning. Many a nursery school has improvised spaces in which to develop "team feeling," to work in groups, to be alone in, or just with a friend. Perhaps that is so because in early childhood education we were not so afraid to abandon structure in teaching, and perhaps because teachers of small children are keenly aware of the child's sense of discovery.

Thus, if we were to mesh learning with play and recreation, if we were to create spaces outdoors that carried in them all the elements of indoor learning, we could once again combine the concepts of play and work. We could realize a concept as old as the views on leisure of Plato and Aristotle, and as well defined as the ideas of Huizinga, the Dutch sociologist who stated that all men's non-materialistic activities are in the end "play" on its highest level.

Playscapes Abroad

During recent study tours of child centers in England and Sweden, I observed much valuable learning that was derived from the outdoors. I visited infant schools where the good barnyard practice of egg-counting resulted in complex math problems, and where adventure playgrounds gave first-hand lessons in building, in materials, in structure, and in team work. These activities are valuable not only for healthy children, but even more so for children with emotional or physical handicaps who are customarily kept from exposure to outdoor hazards. The look on the face of a handicapped child when he first mastered the ladder leading to the foam-rubber jumphole was reward enough to encourage an architect to think up a thousand pieces of equipment for disabled children.

From these visits I came away with the realization that solid, fixed, hard pieces of equipment are not nearly so inviting as a few found objects intelligently placed and loose enough in structure to allow multiple use. Perhaps most important was the value of constant, unobtrusive guidance by the supervising adult, giving stimulation and using basic teaching techniques.

Planning at the NCRC

These insights provided background as we approached two recent commissions for outdoor learning spaces. The first was a request from the National Child Research Center, a long-established Washington, D.C. private school for young children, simply to solve a drainage problem on the school's existing playground—a large one-acre plot in a venerable residential neighborhood. At the first meeting with the school's director, Dr. Janet Weaver, we discussed the problems of the yard; and we soon discovered that it needed more than just drainage tiles and a few retaining walls. *If something were to be done, it might as well be for an educational purpose, adding a new learning dimension to the total school program.*

The suggestion was enthusiastically

received, although funding was unavailable for any such extended work scope. Nevertheless, our office began to meet with the school's faculty at the request of the board of trustees, and together with the director and the teachers we sought ways to convert the playground into an "outdoor educational laboratory"—an extension of the indoor classroom.

The steps we took initially were to evaluate the existing natural assets of the site and survey all equipment in place. Later, a series of informal conferences with the center's director and instructional staff, including teacher aides, outlined the objectives and potentials of outdoor learning. From this we catalogued the basic activities that could take place outdoors and involve all age groups:

1. Sand play
2. Water play
3. Ecological studies
4. Nature studies
5. Animal shelters
6. Areas for the teaching of basic sciences (the school already has a highly developed summer science camp and teacher training program)
7. Art work
8. Gross motor activities
9. Fine motor activities
10. Areas for small group instruction
11. Free and leisure time activities
12. Table-work areas
13. Greenhouse, gardening
14. Resting areas
15. Transitional play between indoors and outdoors.

Matching the existing site features, its varying levels, and landscape zones with the requirements for each of the activities, we found a natural grouping over the entire site—gardening in the frontal sunny spot, animal shelters near and under the existing structure, table and art work areas near the main house for the transport of supplies and water, the amphitheater in the secluded grove of trees, sand play and high-activity areas in the open central part because of the already existing paved trike trail. The building's rambling front porch became our transitional zone.

The organization of the school and the ages of the children further required three separate teaching stations to be identified to allow teachers to work with their own group in a contained space, rather than at large. These stations would each feature the "basics" such as sand play, gross and fine motor activities. However, since each

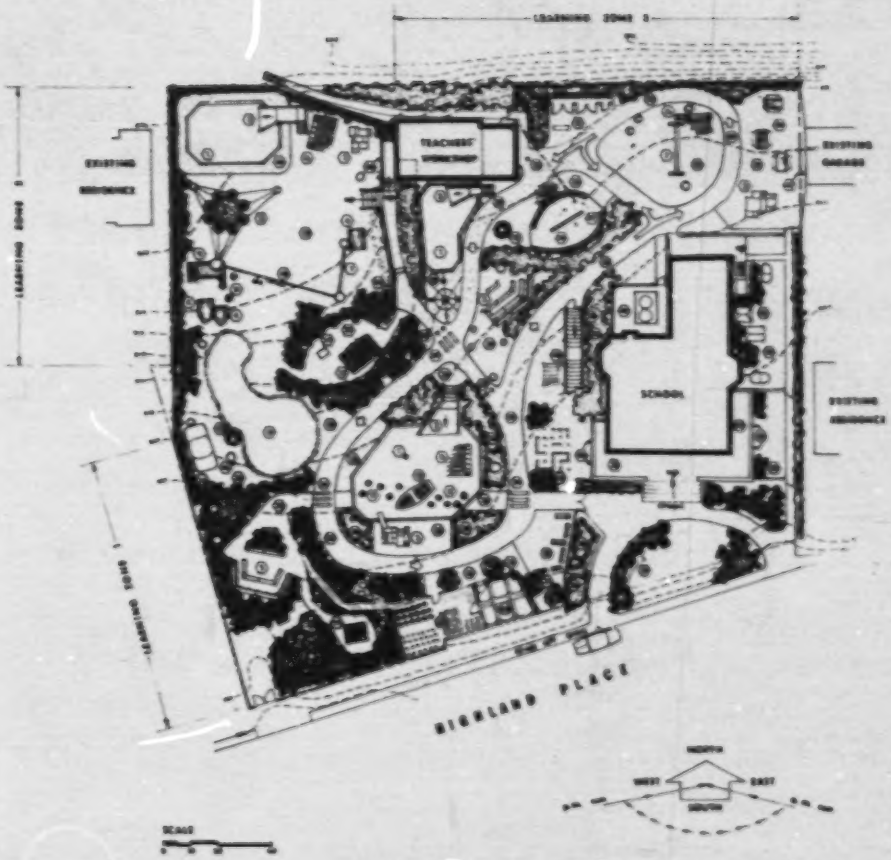
GRAFFITO WALL

area also has special characteristics and learning possibilities, the classes would routinely rotate to the other sections.

By this method the physical attributes of the existing playground were matched with many imaginative suggestions and ideas resulting from our meetings, and we ultimately arrived at the basic plan. It should be noted that the plan provides a large number of spaces and facilities that can be left unsupervised, or that are unstructured and undefined—allowing the children's creativity to make them come alive. Since we were dealing with healthy, active three-to-seven-year-olds, we could provide a number of stimuli and active equipment, such as the glide bar, that challenged the child's courage. We also gave them spaces where things could "happen," such as the graffito wall for free drawing and inventing, the Tukul hut for retreat, study, play acting or other spontaneous activities.

In all these things we strove to provide for the children things that were real, that could "become something" and that helped them grow. From the outset it was known that money was not immediately

"TUKUL" HUT



LEGEND

1. SAND ENCLOSURE (WINTER ICE SKATING IN [illegible])
2. SLIDES
3. CLIMBING GYM WITH FIREMAN'S POLE
4. CULVERT
5. AMPHITHEATRE
6. LADDER, CLIMBING NETS & ROPES
7. SWING SETS
8. TIRE SWING
9. TREE HOUSE
10. GLIDE BAR
11. JUMP LOGS
12. TREE SEATS
13. ROWBOAT
14. BAR-B-QUE
15. "TUNNEL" HUT
16. PLAY CAR
17. SLIDING MOUND
18. COMPASS ROSE
19. WATER TROUGH & DRAINAGE PIPE
20. VEHICLE GARAGES
21. "GAS PUMP" & LIMBO
22. VEHICLE PATHWAY
23. POLE BARRIERS
24. WORK TABLES & BENCHES
25. ANIMAL SHELTERS
26. OUTDOOR STORAGE
27. GRAFFITO WALL (ADD 2' TO EXISTING WALL)
28. NATURE STUDY ZONE
29. VEGETABLE GARDENS (24" FENCING)
30. GREENHOUSE
31. FRUIT TREES
32. BENCH AREA
33. COVERED PORCH (BASKET SWINGS)
34. PAINTED GRAPHICS
35. ABSORBENT GROUND COVER
36. IVY BED
37. SIGN IDENTIFICATION
38. FENCING (NEW)
39. FIRE ESCAPE
40. A/C ENCLOSURES
41. FREEZE PROOF HOSE BIB
42. PHYSICAL SCIENCE AREA
43. SLOTTED POST & BOARD CONSTRUCTION AREA
44. RELOCATED PLAY HOUSE
45. TIRE SWING
46. TIRE TRACK
47. BASES ON WALL & FENCE

SHRUBS ○ TREE ✱ CLIMBING VINE

CONCRETE PAVING

LOW MASONRY WALL

GRAVEL

RICHARD J. PASSANTINO, A.I.A., ARCHITECT - PLANNER [illegible]

PLAYSCAPE

NATIONAL CHILD RESEARCH CENTER, WASHINGTON, D.C.

available for the project, especially on a bid situation; but this "minor" condition was deliberately ignored during the brainstorming sessions. It was, however, a very real consideration in the design and planning stage where we made every effort to use found or inexpensive equipment and simple, labor-saving techniques to accomplish the job. Furthermore, a priority designation was placed on each item or grouping in the overall master plan so that work could be accomplished in an orderly and cohesive manner once money became available.

At this writing, the plan and sketches are prominently displayed in the school's hallway as inspiration to donors and friends of the school with time to spend. An immediate result has been a feeling of anticipation by children, faculty and parents alike. A small implementation grant of $2,500 has already come forth from the Johnston Foundation of Washington, D.C., and a local landscaping firm has offered plants at no cost. A committee of parents and board members has been formed, and the NCRC playscape is on its way.

National Children's Center Playscape

It was during our involvement with the NCRC playscape that our office was asked by the prime building architects and the client, Dr. Erwin Friedman, Director of the National Children's Center, a large hospital and training center in Washington, D.C., to develop a similar concept for an outdoor space. This large hospital and training center was already under construction, and the site available for the playscape was considerably smaller. The children using this facility would have a range of physical and mental handicaps, including blindness, deafness and wheelchair confinement. A large number would be emotionally disturbed or marginally retarded children, many of whom would eventually reenter the normal school system. We had to consider children who could smell but not see, touch but not hear. Some were confined to movement on crutches, and others were mentally retarded or suffering from acute hyperactivity.

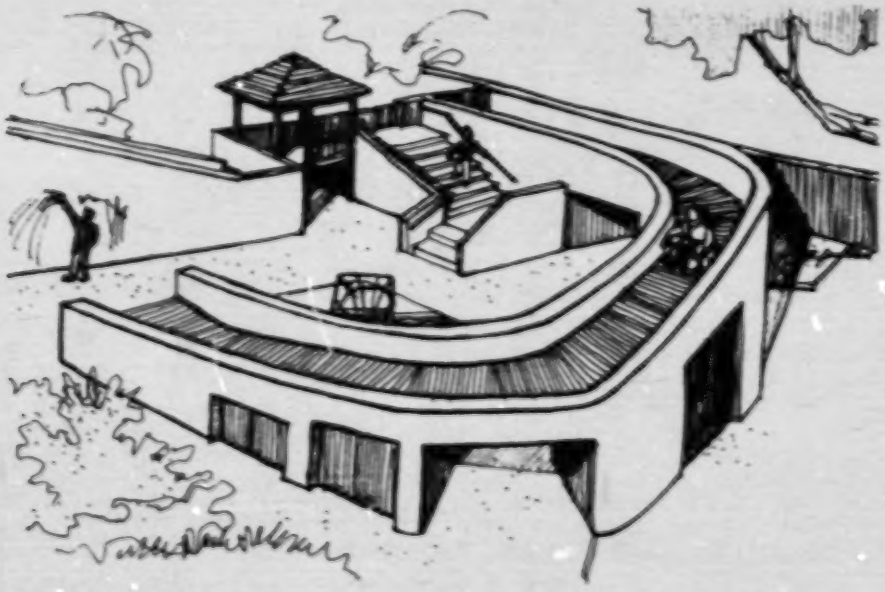
When dealing with handicapped children, we must remember that much of their training and treatment concentrates on their ailment, almost to the exclusion of their well-functioning facilities. Children in wheelchairs suffer severely from lack of exercise that is fun. Too often they are ridden by fears of any kind of motion or exertion. For them, exercise has often meant a therapy room, some pain, and no reward. Getting dirty or wet are experiences largely denied them. In the design for the National Children's Center playscape we strove to give each child experiences that could compensate for those in which he could not participate. And so we provided tactile experiences for the blind, safe motion equipment for the physically handicapped, visual impulses for the deaf, quieting experiences—such as water and sand—for the overactive, and small retreats for everyone.

For the design of this playscape, some basic research was required. We felt that compensations in design had to be made and extra insight acquired into the nature of the treatment programs. This research was conducted by our project manager for the job, Jane Hurt, a recent graduate in architecture and environmental design, who visited and observed children and talked to staff members at several of the metropolitan area's leading institutions for developmental disabilities. We found the U.S. Division of Developmental Disabilities of the Department of HEW[1] especially helpful, as were recollections of my 1970 visit with Lady Allen of Hurtwood at her Center for Handicapped Children in London.[2]

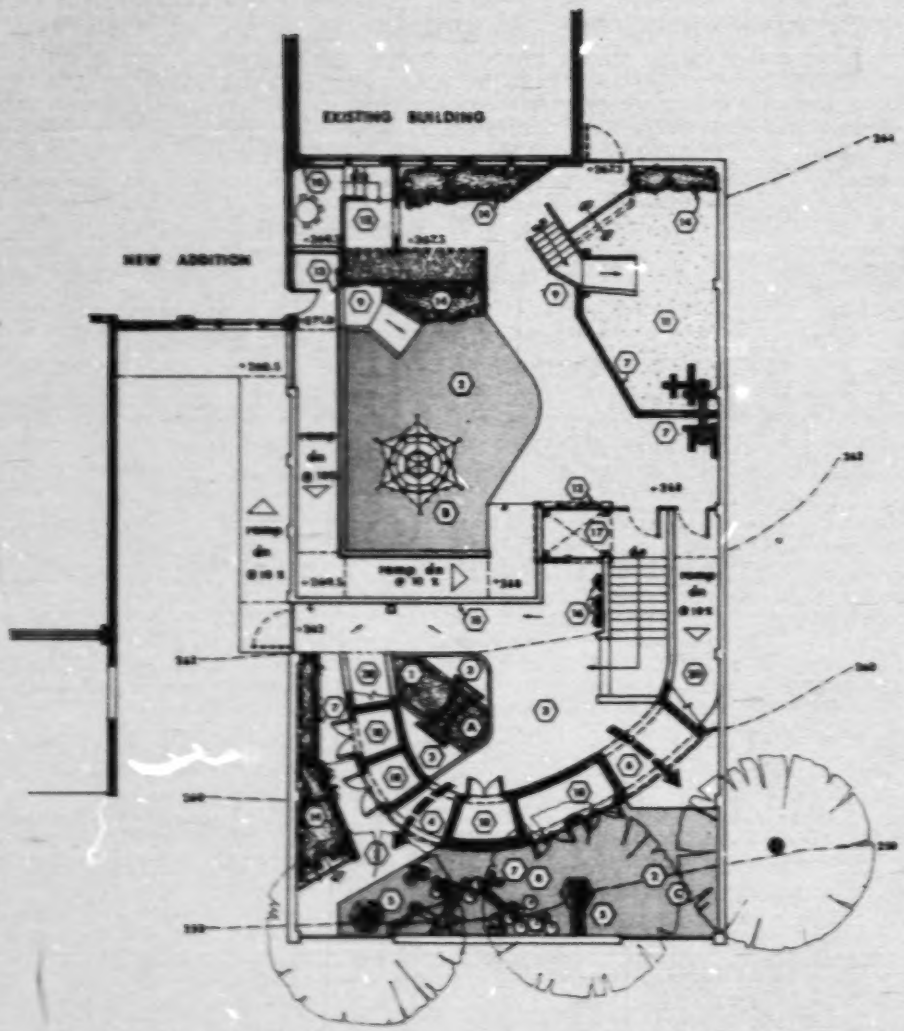
Considering the small site and the multitude of handicaps it has to accommodate, the basic design was kept to a much more limited scale. Originally, the two levels of the area were to be separate, but we found that by adding a winding ramp of no more than eight percent incline, and combining the two levels, we could provide a larger area for active children, add excitement and spatial stimulation for the wheelchairbound, and at the same time accommodate a large portion of our storage needs. Several overlooks and terraces allow good vistas from which to watch others play, as well as making super-

[1] The address of the Division of Developmental Disabilities is South Building, Room 3428, Department of HEW, Washington, D.C. 20201.

[2] Those interested in learning more about Lady Allen's Center for Handicapped Children may wish to see the film, "Pacemakers—No. 20," available from the Education Office of the British Embassy, 3100 Massachusetts Ave., N.W., Washington, D.C. 20008.



RAMP



LEGEND

1. WATER (8" CURB)
2. ABSORBENT GROUND COVER
3. IMPERVIOUS SURFACE
4. CRAWL-THROUGH TUNNEL
5. TREE SEAT
6. WALK-THROUGH TUNNEL
7. RAILROAD TIES
8. LOGS
9. SLIDE
10. CHALKBOARD
11. SAND
12. PLAYHOUSE
13. GATE
14. PLANTING
15. GRAFFITO WALL
16. WALL POTS
17. TOWER
18. STORAGE UNDER RAMP
19. ADVENTURE PLAYGROUND
20. RAMP

EXTERIOR EQUIPMENT (SEE SPECS.)

A. NETWORK TUNNEL
B. CATS CRADLE
C. PLAY PLANKS

FREEZE PROOF HOSE BIB
D DRAIN
C.M.U. SUPPORT WALL

RICHARD J. PASSANTINO, A.I.A.
CONSULTING ARCHITECT
FEB. 1, 1972
DRAWN: M. J. MURT

OUTDOOR PLAYSCAPE - CLINICAL & TRAINING CENTER
NATIONAL CHILDREN'S CENTER, WASHINGTON, D.C.

vision easier for the staff. Secure areas in which to be alone are provided, and equipment—such as very shallow water with a network tunnel—that can be used without help from adults. Planters and sandbox have sections that are at table height and cantilevered to allow the wheelchair child to participate while the ambulatory child can play at the same level on the sand mound, thus inviting their playing together. We found that motion equipment and things that changed were not desirable for the outdoors, nor were pieces of equipment that needed teachers' help, such as swings, slides, and climbing nets. These are, however, part of the indoor equipment selection we made for the classrooms and balconies, where they form part of the daily curriculum and are worked on with the teacher on a one-to-one basis. The yard was to be the space for freedom and for being by oneself. A large play area on the same site is scheduled for later development, perhaps as a prototype for handicapped learners.

This project left us convinced that much more extensive research is needed, that we need to test and observe much more thoroughly the use of the outdoor as well as indoor environment as a therapeutic element in the treatment of physical and mental disorders. We need to know more about how to stress the healthy part of each child, assist the disabled part, while teaching the whole person to compensate for his handicap. By such means, the outdoors can be a place for healing as much as for learning.

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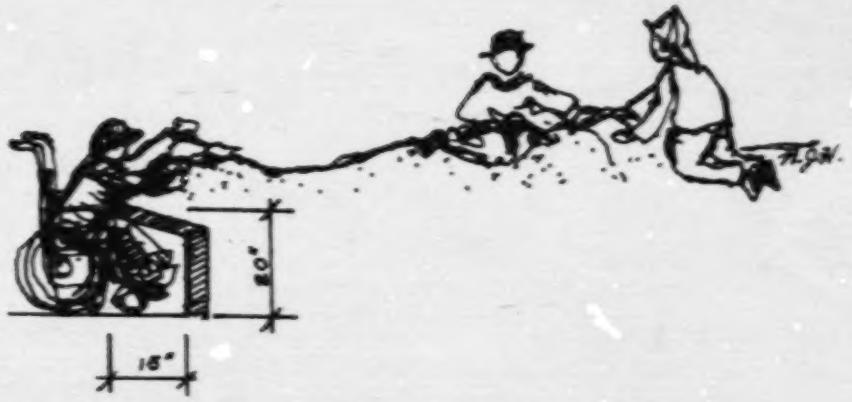


SECTION B-B'

where play space meshes with learning

Janet Weaver, Ph.D.

The National Child Research Center in Washington, D.C., was one of the country's early child-study institutions. Established in 1928 under a grant from the Laura Spelman Rockefeller will, which provided funds for a center where scholars could study children during their early years, it has continued as a non-profit, independent preschool and research facility since then. The Center presently enrolls some one hundred fifty children from two and one-half years to seven. The youngest children (two and a-half through five) come for a half-day preschool program, while multi-age all-day groups are available for older children (four through seven). A significant recent addition to the Center's program is the Learning Institute of Early Childhood Education which offers, in association with area institutions of higher education, fully-accredited courses in early childhood education for local professionals, paraprofessionals, and college students.

NCRC Philosophy

The Center's educational philosophy, with respect to intellectual development, could perhaps best be described as Piagetian. The child constructs his unique conceptualization of reality from repeated movement in, and manipulation of, his physical world. He holds things in his hands; he moves among physical entities; he images things and people remembered; finally, he symbolizes things and people and their relationships—first with actions and objects, then with language. Infants do only the first few of these; young children do all of them. The preschool child is at that point of integration of language and action where language distills and makes conscious the understandings gained intuitively in action.

Within this framework the Center recently developed a special summer science camp, a six-week experience for young children which, in the context of a usual preschool program, focuses in on integration of physical activity and verbal explanation. It includes as a significant part of the program movement education, creative dance, tumbling and trampoline—all means of physical exploration of space with the child's most natural medium, bodily movement. Also within this same framework and that of summer camp needs, the Center has recently had a thorough look at its outdoor facilities.

Seeking a Solution

When visitors come to the NCRC, they invariably remark on the school's spacious playground, with its tall old trees for shade and swings, and the rolling contours which provide secluded as well as open spaces. We on the staff smile ruefully, for those rolling contours and the grade of the terrain provide us also with serious erosion problems. A stable grassy surface cannot be maintained, for the first lengthy rain washes its top soil down the hill; even short-term projects like gardens have a hard time surviving. It was for help in dealing with these severe erosion difficulties that we first consulted architect Richard Passantino. His interest in school and playscape design took us the next step: why not a master plan for the total outdoor area incorporating physical needs and educational priorities?

Brainstorming with the architect and the teaching staff started the planning.

"Where are we going to put the baby goats during camp this summer?"

"Actually, we need real year-round places for animals."

"The garden, too . . . all those shade trees make tough gardening."

"What about winter gardening?" . . . "Indoor light gardening?"

"Better yet, a greenhouse outside."

"We need more outdoor faucets so water's always at hand."

"Water in the winter?"

"We should flood one of those giant sandboxes for ice-skating."

"Yeah, the sandboxes have got to be big—so big stuff like a sliding board or climbing net and dramatic play props can fit inside."

"Then the sandboxes can be a source of dramatic play, too."

"But we need some quiet spaces, too, for dramatic play."

"A playhouse in a secluded area?"

"A child-sized amphitheater in a secluded area would serve for dramatic play and outdoor story times."

On and on.

We found we wanted to have a variety of underfoot surfaces—sand, grass, gravel, dirt; plenty of outdoor storage—but storage integrated into the total educational setting; large-muscle areas which also stimulate dramatic play; secluded spaces for meditative, alone times.

A Plan Emerges

After several preliminary sketches, Mr. Passantino returned with the first draft of a master development plan for the staff's review. Again, consideration of the space as a learning environment took form: how to integrate water play, erosion problems, plant growth into the special program of the Summer Science Camp; how the space under the fire escape could be made usable; where to concentrate physical sciences materials like pulleys, ropes, swings, balance boards; what provision for dramatic play to be built in or to be left flexible; how to build in probabilities of active, "close-in" supervision rather than far-point, distant supervision of a group spread out all over the grounds.

What began to take shape was a division of the total area into three learning zones, since we may have as many as three groups on the grounds at once. Each of these zones is the size of an ordinary preschool playground. Because we consider the outdoors as much a learning laboratory as the indoors, we wanted the total acre-plus space of the grounds defined in a way that would encourage children to engage in most of their activities in close proximity to their teachers, where the latter could easily capitalize on the teaching-learning opportunities that naturally arise. (A long, concrete tricycle walk connects two of these areas so that extended exploration is always available to the children, within the basic overall structure of a "home-base" play space for each group.)

Each area has certain similarities: access to the tricycle walk for restless, four-year-old drivers; giant sand pits with climbing nets and gyms, plus wide-platformed slides either adjacent to or emptying into them; strategic areas of absorbent ground cover to build up the kind of moisture-filled spaces that will help maintain grassy surfaces; an

GLIDE BAR

old faithful rack of swings; huge concrete culverts for climbing and dramatic play.

In addition to certain commonalities, each area has special pleasures of its own. In one zone, a giant swinging seat made of tires and nets is hitched at one corner to the tree that holds the tree-house from which the two-handed glide-bar starts. This combination of exciting large-muscle equipment evokes dramatic play whose compelling interest holds the children in their home-base playground, close to their teachers' companionship and supervision.

A second zone has another such large-muscle/dramatic play area composed of different elements: an old car, circular tree seats around a nearby tree. Strung from another giant tree hangs an ordinary two-tire swing with a wildly generous swinging arch.

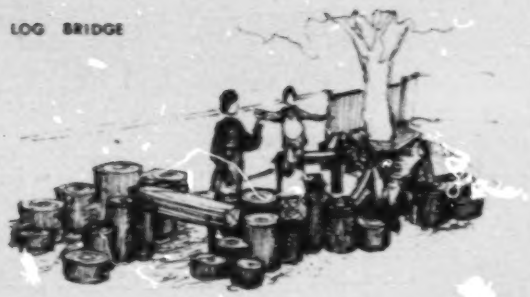
A third area features a large water play pit with overhead pipes (the size and shape of a swing frame) providing the sprinklers. Two areas incorporate playhouses, one with the barbecue facilities that make picnics fun, the other with the vegetable garden (and its own built-in food supply) nearby . . . and both in basically secluded areas that provide a cozy, "away" place. One of these secluded areas, especially, is a place of bushes and grasses, of shade and sun-dapples—a wild place for an individual child's forays from the more cultivated garden area and the busy tricycle walk close by. Two zones have outdoor amphitheaters, for dramatic play, for stories, for any of those times when teachers want to gather their group around them closely and comfortably. Between two of the zones is a generous mound for snow sliding in winter and erosion study in summer. Dividing another two zones is a concrete wall snug against an adjacent hill and rising two feet above the sidewalk at the top of the hill. Colored windows in the wall allow viewing the scene from the sidewalk in different colors, while the other side of the wall forms a giant easel for outdoor painting.

Equipment for Learning

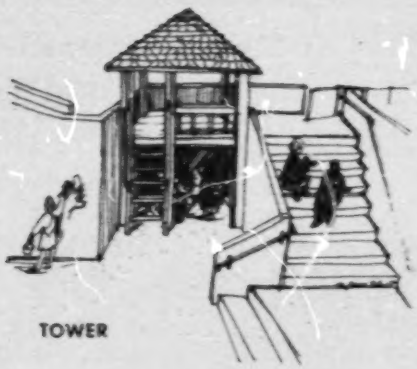
The equipment elaborates and evokes those themes that are of importance in the preschool learning laboratory: the juxtaposition of physical and verbal experiencing of the environment, and the sense of mastery, with the teacher's support, of the child's world. The giant tire swing/tree house/glide bar complex, for instance, is a setting designed for themes of power and mastery to be projected physically and acted out verbally—the kind of juxtaposed physical/verbal rehearsal which allows language to reinforce the understandings gained through action. Less obvious, but clearly as crucial, are the cozy, secluded spaces which permit a retreat from stimulation and an opportunity to rehearse, in contemplation, the solutions discovered in activity. The vegetable garden elicits a special kind of mastery: the opportunity to act upon the environment and to receive a clear response (i.e., growth) from gentle, caring action.

Finally, the total project can become a means of parent education, because the playscape is designed to be implemented in stages by parent volunteers who are not

LOG BRIDGE



NETWORK TUNNEL



TOWER

necessarily professionals in such work. The decisions concerning priorities and the actual construction of equipment will elicit consideration of educational goals for each area. Why are the sliding boards so wide? Why a variety of climbing equipment? Why a variety of surfaces? Which has priority: getting large sand pits into each learning zone so as to preserve certain commonalities for each, or putting together the total tire swing/tree house/glide bar complex for one area, in order to develop fully the total potential of those separate parts?

In summary, the playscape is seen as a critical learning laboratory providing the expansiveness which the indoor classroom's shape and size inhibits, the environmental experimentation that leads to a sense of mastery of the environment, the close association of thought and action necessary to the young child's understanding of reality, and—as a special dividend—the chance to teach all this to the parents whose children come to use it."

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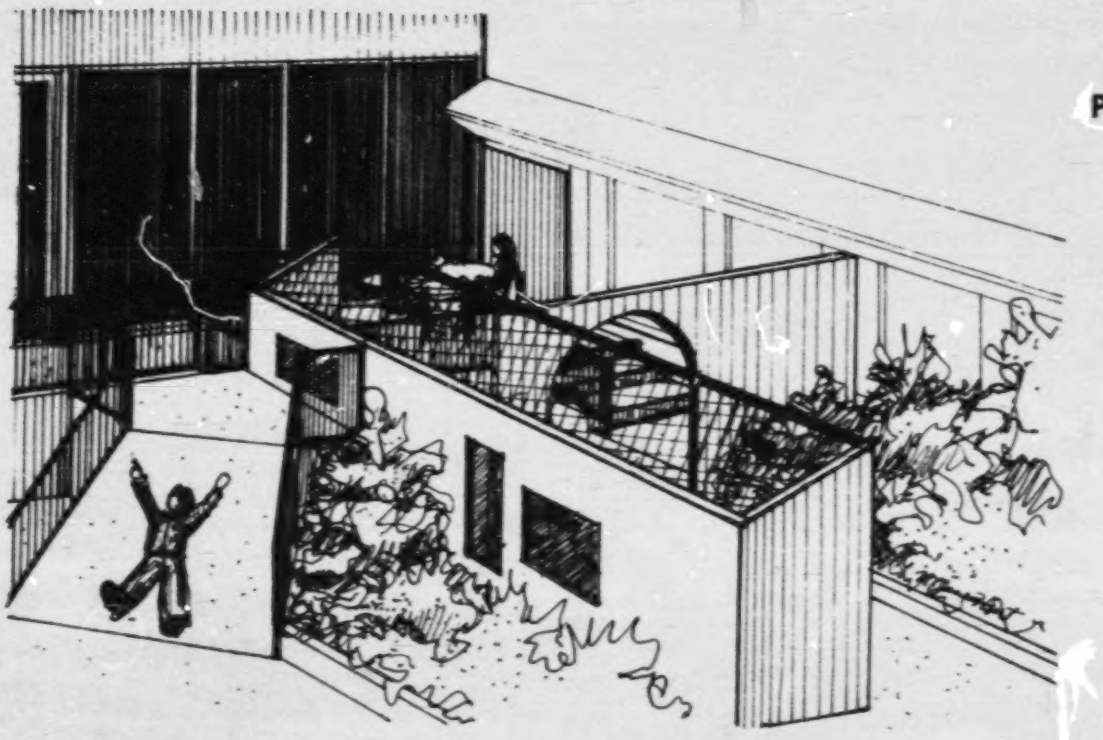


PLAYHOUSE

play is serious business

Erwin Friedman, Ph.D.

Every child should have
mud pies
grasshoppers, water-bugs,
tadpoles, frogs,
mud-turtles, elderberries
wild strawberries,
acorns, chestnuts,
trees to climb,
brooks to wade,
water-lilies, woodchucks,
bats, bees, butterflies,
various animals to pet,
hay fields, pine cones,
rocks to roll, sand,
snakes,
huckleberries,
and hornets;
any child who has been
deprived of these
has been deprived of
the best part
of his education.

Luther Burbank

When observing different groups of children at free play one is impressed by the tremendous differences, which are immediately apparent, between normal children's play and that of significantly handicapped children. The normal child uses even the simplest equipment with great élan and enthusiasm, letting his imagination transcend the realities of the playground. The severely handicapped child has great difficulty initiating play and picking up the functional cues provided by the best equipment in order to produce appropriate or even minimal responses. Sandhu (1971) describes a research project sponsored by the Nuffield Foundation in Great Britain that analyzed play and the environment in which play takes place. The study clearly showed that the handicapped child was reluctant to explore, became easily bored, and behaved significantly differently from his normal peers in a free-play situation. Whereas the normal child easily absorbs by imitation and trial and error—learning the intricacies of the dream palace he just built, and learns with great speed to orient himself to the intricacies of his fantasy battlefield, the handicapped child very often experiences elaborate equipment and apparatus as another hurdle on the rocky path of his daily activities.

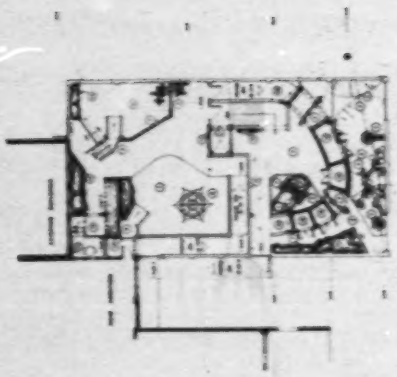
Handicapped Children at Play

A great deal of research and planning goes into the curriculum development of severely handicapped children, as nearly all phases of life skills and elementary scholastic skills are covered, but it is interesting to note that play and free-time activities are left up to the child to develop. It is not uncommon, therefore, to observe groups of severely handicapped children in well-equipped playground and recreational facilities pathetically hiding behind or under the equipment, playing with a string aimlessly in the dirt. In the field of special education the notion of education by objectives is widely accepted, and in progressive schools around the country teachers are preparing clear, measurable objectives and developing methods to achieve them. In the use of free time at school, most often the child does the programing and goal setting. He is not prepared for this task and has not mastered the minimal skills on which to build new and more complex ways to master the threateningly magical world of the playground.

Freeman and Mundy (1971) plead for a goal-oriented recreational program in which each activity is chosen for its value on the scale of developmental skills. In their study they found that in most "programs for the retarded the activities are chosen somewhat haphazardly and the only criterion [sic] to be satisfied are that they be fun and involved [sic] most, if not all, of the student [sic]" (p. 19). They contrast this approach with the developmental learning approach in which an activity is included in a program only if it helps an individual student improve a particular skill in which he is weak.

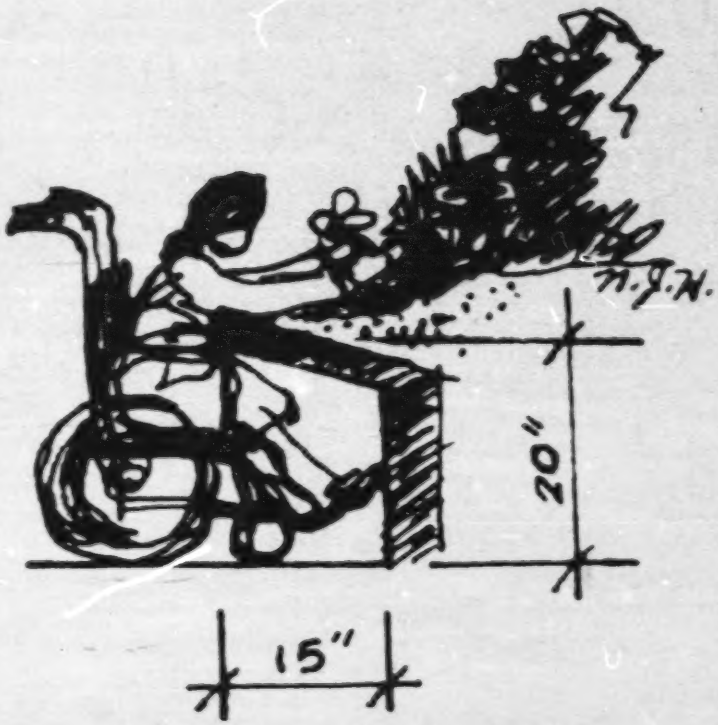
What Research Says

Research data suggest that the influence a handicapped child's extra-mural activities have on him is so great, both with regard to his intellectual and social functioning, that it might be worthwhile to invest much more energy and effort to cultivate and research these activities. Hillman (1965; 1968) found that even profoundly retarded individuals showed significant gains in their physical, motor, and social areas of functioning when an intensive recreation activity program was provided for them. A well-designed program by Bennett (1967) showed that severely handicapped individuals improved their social behavior and intellectual skills as a result of intensive recreational programing. One of the early pathfinders in this field, who for the last two decades has researched the effects of extra-mural activities on the performance of handicapped children, suggests that the learning curves of normal and retarded individuals are similar concerning motor skills and that the mentally retarded are capable of learning



– under the right conditions—a wide range of motor skills (Oliver, 1958, 1966). The same result was evidenced by Graveline (1968) who studied the effects of non-schoolroom programs on the manual dexterity of his students. A major contribution to this field was the publication of some of Frostig's (1970a, 1970b) theories and practices in movement education.

One is duly impressed by even this small sampling of research and demonstration studies, all pointing to the major importance of non-academic, non-schoolroom programing on the behavior and ability structure of handicapped individuals. At the same time, it is important to note that there are nearly no data available on the interrelationship of space, equipment, and recreational and physical exercise programing and their effects on learning of scholastic and social skills. It would seem logical that the government, which is spending hundreds of millions of dollars in educational facility construction, would want to undertake or underwrite major research studies on the effect of building components on the educational process. Simple questions, such as what is the maximum size of a playground within which no outdoor learning can take place, but only chaotic random activities, were not asked and therefore never answered. Or, what is the meaning of space to a handicapped child in order to maximize the learning that takes place in that space? What is the optimum class size, and what is the maximum non-interfering noise level? Do windows interfere and how much disturbance does the mirror of the observation room cause? There are a number of cookbook solutions to these problems—none, however, based on solid research.

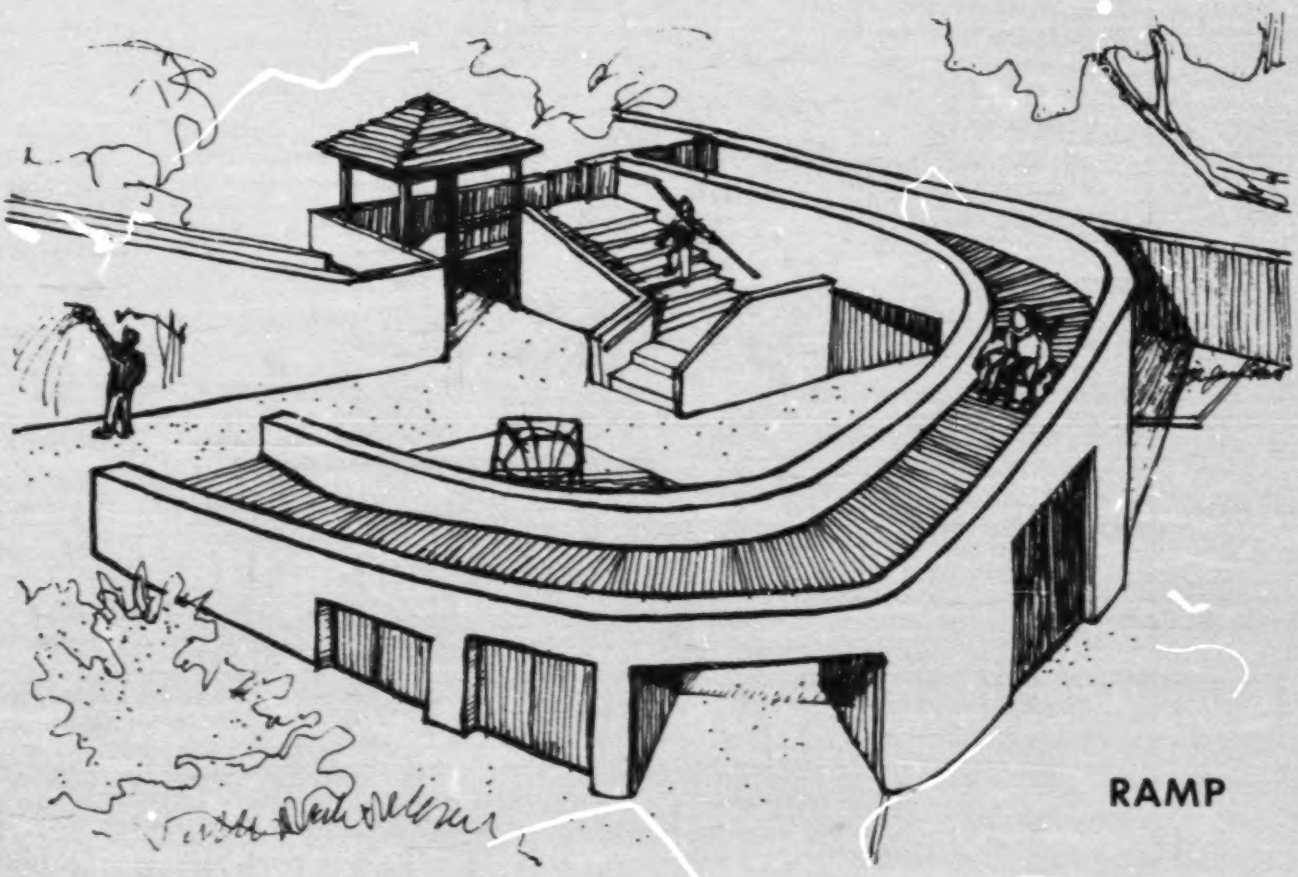


SECTION A–A'

A national survey undertaken by the Council for Exceptional Children showed clearly that important and decisive architectural decisions were based on educated guesses rather than on research data. It seems that this way of proceeding is not new to the special educator. Blackman (1967), a leading theoretician in this field, summarized: "Special education for the mentally retarded has been a relatively unsuccessful enterprise simply because there has been very little special about it. In training administrators and teachers, the broad and poorly understood curriculum objectives of personal, economic, and social adjustment have been emphasized at the expense of understanding learning disabilities and developing specific instructional procedures. The gap between the broad principles espoused in the teacher's colleges and the day-to-day instructional needs of children has created a breed of teachers who are long on cliches and short on pedagogy."

Some of these cliches have been translated into concepts by programers and architects and actual construction begun, although none of the basic elements of these concepts was field tested or submitted to experimental rigor. A most timely paper by Cruickshank and Quay (1970) focuses on the inadequacy of decisions made by special educators and architects regarding the nature of the physical environment in the absence of empirically obtained evidence. The crying need for good research in all areas of special education as a model for all educational research activities was underscored recently by the author (Friedman, 1973).

The problems outlined above are multiplied when we apply them to a population that includes developmentally disabled preschool children and deaf and blind populations. The educational and habilitational processes are only in the early stages of development; and we have only a smattering of knowledge about the learning process, developmental speed and phenomenological world of these individuals (Brodey, 1964). We are just beginning to chart their



perceptual abilities, and have not even begun to search for complementary sensory pathways for learning input to replace or compensate for the damaged and lost ones.

The National Children's Center has undertaken a major building project to serve the severely handicapped children described above. This building project is supported by the Economic Development Administration of the U.S. Department of Commerce. We were fully aware of the difficulties facing the programers and the architects. We presented the dilemma to our architect, Milton Fischer, A.I.A., and we received a design that is so flexible that, if our research staff uncovers an important relationship between some environmental factor in the classroom and the learning process, we can easily change the factor in order to optimize the teaching process.

A Design for Outdoor Learning

When the problems of non-classroom activities were discussed and some of the aspects of flexible classroom equipment for preschool groups came to the fore, we were indeed pleased to have the expertise of Richard J. Passantino, A.I.A., at our disposal. He immediately grasped our concept of the outdoor learning space and proceeded to design the kind of flexibility and "researchability" that should be part and parcel of each educational and day care facility. The program description and the resulting design take into consideration that most activities are made up of a number of component skills and that the individual must possess all or at least most of these before he can repeatedly complete the whole task.

We need to learn a great deal yet about this sequential development in the area of free play and recreational and playground activities, but this facility as it is planned will enable us to search for more ways to serve the handicapped better and more effectively. Montaigne, the sixteenth century French philosopher, once said, "The play of children is their most serious occupation." Let us try to teach them to be more productive at it, so that they will find it more satisfying.

PLANTING

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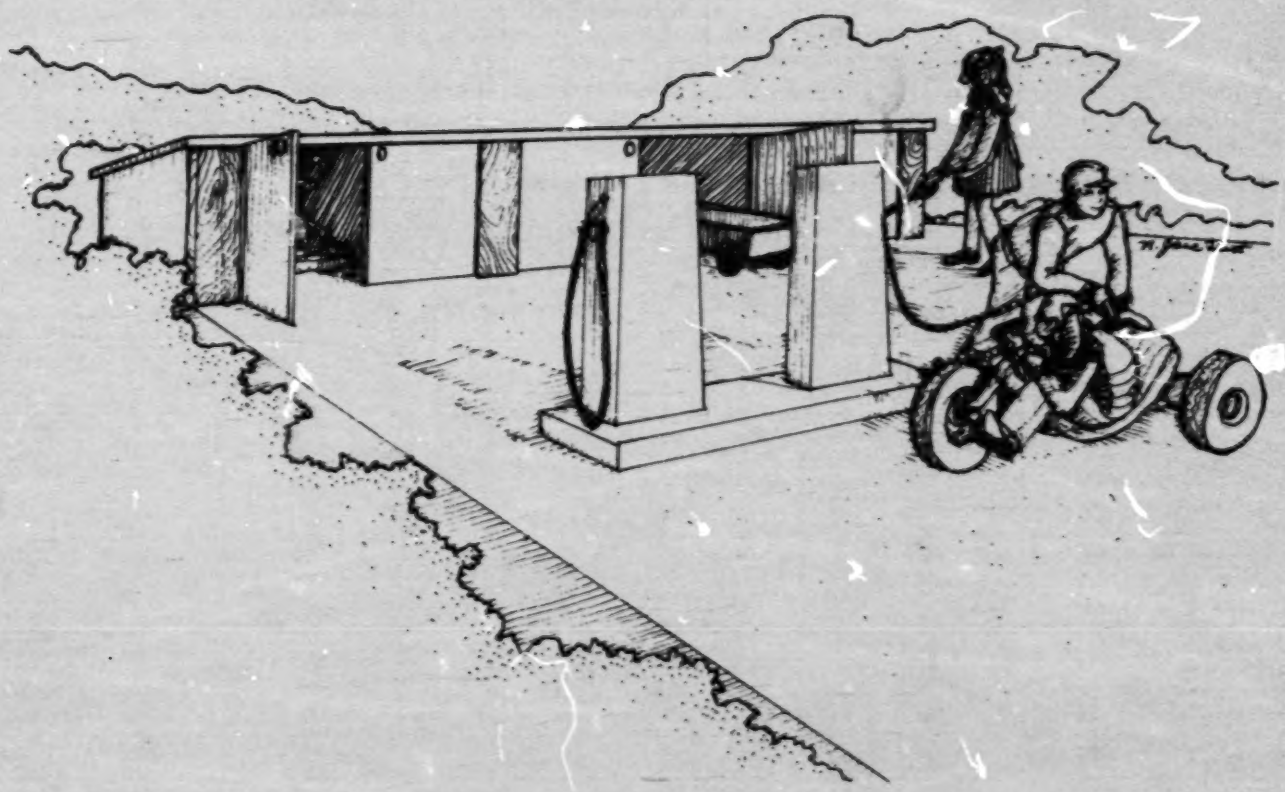

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